



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Master of Engineering

Level: PG

Branch: Plastics Engineering

Subject Code: ME02084041

Subject Name: Post Processing Techniques in Plastics

| | |
|-------------------------|------------------------------|
| w.e.f. Academic Year: | 2024-25 |
| Semester: | 2 |
| Category of the Course: | Professional Elective Course |

| | |
|----------------------|--------------------------|
| Prerequisite: | Plastic Processing-1 n 2 |
| Rationale: | Nil |

Course Outcome:

After Completion of the Course Student will able to:

| No | Course Outcomes |
|----|---|
| 01 | Understand and apply post processing techniques |
| 02 | Know the trends of decorating |
| 03 | Learn to select post processing techniques |

Teaching and Examination Scheme:

| Teaching Scheme (in Hours) | | | Total Credits L+T+(PR/2) | Assessment Pattern and Marks | | | | Total Marks |
|----------------------------|---|----|-----------------------------|------------------------------|------------|---------------------|---------|-------------|
| L | T | PR | C | Theory | | Tutorial/ Practical | | |
| | | | | ESE (E) | PA/ CA (M) | PA/CA(I) | ESE (V) | |
| 3 | 0 | 2 | 4 | 70 | 30 | 20 | 30 | 150 |

Course Content:

| Unit No. | Content | No.of Hours | %of Weightage |
|----------|---|-------------|---------------|
| 1. | Machinery & Joining of Plastics: Introduction – Importance of machining – methods viz. cutting, drilling, blending, filling, etc. Joining – principles – cohesion principle, adhesion principle – solvent cementing, Dop cementing, welding of plastics – viz. high frequency welding thermal sealing, spin welding, vibration welding, hot plate welding, ultrasonic welding, Adhesive bonding – examples: Mechanical fasteners. | 10 | 20 |
| 2. | Decoration of Plastics : Screen Printing technique , its machines, | 15 | 25 |



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| | applications; Pad Printing : Machines and applications; Hot foil stamping : its machines, and applications, In mould decoration | | |
| 3. | Vacuum Metalizing..the process ,machinery, raw materials that can be vacuum metalized, sheets, Packaging films, wide spread applications in detail | 10 | 15 |
| 4. | Painting Techniques Spray painting, Coating, applications | 10 | 40 |
| | Total | 45 | 100 |

Suggested Specification Table with Marks (Theory):

| Distribution of Theory Marks | | | | | |
|------------------------------|---------|---------|---------|---------|---------|
| R Level | U Level | A Level | N Level | E Level | C Level |
| 15 | 15 | 20 | 10 | 5 | 5 |

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:

Books:

1. Plastics materials and processes by Schwartz and Goodman
2. Industrial colouration of Plastic Parts
3. In-Mould Decoration of Plastics, Author: J.C. Love and V. Goodship, The University of Warwick ISBN 978-1-85957-328-0, Rapra
4. TECHNIQUES FOR DECORATING OF PLASTIC PARTS, Dr. Gnaneshwary Shah)

(b) Open source software and website:

- 1) <https://nptel.ac.in/>
- 2) <https://www.bpf.co.uk/>

Suggested Course Practical List: : As per the above syllabus topics
